Medium-Caliber Gun-Launched Explosive-Driven Magnetic Flux Compression Warhead

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Small Business Information
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Hubzone Owned:
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Abstract
Tanner Research proposes to demonstrate how an existing one-inch diameter ferro-electric generator (FEG) device can be enhanced to develop high-powered microwaves (HPM) for use in gun-launched medium-caliber warheads. Using a linear initiator to simultaneously detonate the explosive driver over the entire armature length, in order to coincide with maximum flux density, will effectively eliminate any need to `compress' the magnetic flux to obtain HPM power output. Initiation simultaneity will significantly reduce warhead size, cost and complexity. Tanner will be teamed with Loki, Inc. and use their FEG devices as the baseline magnetic circuit hardware. Tanner will be adapting to the Loki FEG devices a battery-powered high voltage fireset (1200V) as seed power to both stimulate the magnetic flux build-up and power the linear initiator. By adding timing and switching circuitry, Tanner expects to complete a proof-of-concept device suitable for demonstration and test. The energetics and linear detonator can be added to test and evaluate the HPM power output.

* information listed above is at the time of submission.